



45551281
SEQUENCE LISTING

<110> BASSLER, BONNIE L.
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STEIN, JEFFREY
SURETTE, MICHAEL G.

<120> COMPOUNDS AND METHODS FOR REGULATING BACTERIAL GROWTH
AND PATHOGENESIS

<130> 4555-128.1.1 US

<140> 10/802,425

<141> 2004-03-17

<150> 10/300,818

<151> 2002-11-19

<150> 09/853,832

<151> 2001-05-10

<150> 60/203,000

<151> 2000-05-10

<150> 60/254,398

<151> 2000-12-07

<160> 36

<170> PatentIn Ver. 3.3

<210> 1

<211> 519

<212> DNA

<213> *Vibrio harveyi*

<400> 1

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| actgctccaa | acaaagacat | cctttctgag | aaaggaattc | atacattaga | gcatttgtac | 180 |
| gcaggcttta | tgcgtaatca | cctaaatggg | gatagcgttg | agatcattga | tatctcacca | 240 |
| atgggggtgcc | gtactggttt | ctacatgagc | ttgattggta | cgctttcaga | gcagcaagtg | 300 |
| gctgacgctt | ggattgccgc | gatggaagac | gtactaaaag | tagaaaacca | aaacaagatc | 360 |
| cctgagttga | acgaatacca | atgtggtaca | gcagcgcgatc | actctctgga | tgaagcgaag | 420 |
| caaatcgcca | agaacattct | agaagtgggt | gtggcggtga | ataagaatga | tgaattggca | 480 |
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<210> 2

<211> 516

<212> DNA

<213> *Escherichia coli*

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| gtggcgaaaa | caatgaacac | cccgcattgg | gacgcaatca | ccgtgttcga | tctgcgcttc | 120 |
| tgcgtgccga | acaaagaagt | gatgccagaa | agagggatcc | ataccctgga | gcacctgttt | 180 |
| gctggtttta | tgcgtaacca | tcttaacggg | aatggtgtag | agattatcga | tatctcgcca | 240 |
| atgggctgcc | gcaccgggtt | ttatatgagt | ctgattggta | cgccagatga | gcagcgtgtt | 300 |
| gctgatgcct | ggaaagcggc | aatggaagac | gtgctgaaag | tgaggatcca | gaatcagatc | 360 |
| ccggaactga | acgtctacca | gtgtggcact | taccagatgc | actcgttgca | ggaagcgcac | 420 |

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<213> *Salmonella typhimurium*

<400> 3
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<212> DNA
<213> *Salmonella typhimurium*

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cgcatggcga cgcaatcacg tgtttgatct gcgtttttgc attccgaaca aagaagtgat 120
gccggaaaaa gggattcata cgcttgagca tctgtttgct ggctttatgc gcgaccacct 180
caacggtaac ggcgttgaga ttatcgatat ctgcgccgatg ggctgcccga ccggctttta 240
catgagcctg attggcacgc cggacgagca gcgtgttgcc gagcctgga aagcggcgat 300
ggcggatgtg ctgaaagtgc aggatcaaaa ccagatcccg gagctgaacg tttaccagtg 360
cggtagctat cagatgcact cgctcagtga agcgcaggac attgcccgtc atattctgga 420
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<210> 5
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<213> *Haemophilus influenzae*

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tgtattccaa acaaagaaat tctttcccca aaaggcattc atacacttga acattttatt 180
gctggattta tgcgcgatca tttaaattggc gatagcatag aaattattga tatttctccg 240
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<211> 468
<212> DNA
<213> *Helicobacter pylori*

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gatgtgcgct tcaagcagcc caaccaagat cacatggaca tgcctagcct acattcttta 180
gagcatttag tcgctgaaat tatccgcaac catgccagtt atgtcgtgga ttggtcgcct 240
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ttagaggttt tagaaaagac catgcaagat gtgttaaagg ctacagaagt gcctgccagc 360
aatgaaaagc aatgcggtg ggcggctaac cacactttag aggggtgctaa ggatttagcg 420
cgcgcttttt tagacaaacg cgctgagtgg tctgaagtgg gggtttga 468

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 atcgttgatc tgcttgaaga cacaatgaag gaagcggtag agattacaga aatacctgct 360
 gcgaatgaaa agcagtgcgg ccaagcgaag cttcatgata tggaaggcgc taaacgttta 420
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<210> 8
 <211> 537
 <212> DNA
 <213> *Borrelia burgdorferi*

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 aagaaaagat acccttgaaa atgtaatat tactacaata gacattagaa tcaaagctcc 180
 caacatcgaa ccaataattg aaaacgcagc aatacataca atagagcaca taggagctac 240
 tttacttaga aataatgaag tttggaccga aaaaatagta tttttggcc ctatgggatg 300
 cagaactggg ttttacttaa taatttttgg agactatgaa agtaaagatc ttgttgactt 360
 agtctcatgg cttttttccg aaatcgtaaa tttttcagaa cctatcccag gcgcaagtga 420
 taaggaatgc ggaaattaca aagaacataa cttgatatg gctaaatatg aatcttctaa 480
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<210> 9
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 <212> DNA
 <213> *Vibrio cholerae*

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 gcacaagcat ggctagccgc aatgcaagat gtgttgaaag ttgaaagcca agagcaaatt 360
 cctgagctga atgagtacca gtgcggcact gcggcgatgc actcgctcga agaagccaaa 420
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<210> 10
 <211> 172
 <212> PRT
 <213> *Vibrio harveyi*

<400> 10
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 Pro Ala Val Arg Val Ala Lys Thr Met Gln Thr Pro Lys Gly Asp Thr
 20 25 30

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Ile Thr Val Phe Asp Leu Arg Phe Thr Ala Pro Asn Lys Asp Ile Leu
35 40 45
Ser Glu Lys Gly Ile His Thr Leu Glu His Leu Tyr Ala Gly Phe Met
50 55 60
Arg Asn His Leu Asn Gly Asp Ser Val Glu Ile Ile Asp Ile Ser Pro
65 70 75 80
Met Gly Cys Arg Thr Gly Phe Tyr Met Ser Leu Ile Gly Thr Pro Ser
85 90 95
Glu Gln Gln Val Ala Asp Ala Trp Ile Ala Ala Met Glu Asp Val Leu
100 105 110
Lys Val Glu Asn Gln Asn Lys Ile Pro Glu Leu Asn Glu Tyr Gln Cys
115 120 125
Gly Thr Ala Ala Met His Ser Leu Asp Glu Ala Lys Gln Ile Ala Lys
130 135 140
Asn Ile Leu Glu Val Gly Val Ala Val Asn Lys Asn Asp Glu Leu Ala
145 150 155 160
Leu Pro Glu Ser Met Leu Arg Glu Leu Arg Ile Asp
165 170

<210> 11
<211> 171
<212> PRT
<213> Escherichia coli

<400> 11
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20 25 30
Ile Thr Val Phe Asp Leu Arg Phe Cys Val Pro Asn Lys Glu Val Met
35 40 45
Pro Glu Arg Gly Ile His Thr Leu Glu His Leu Phe Ala Gly Phe Met
50 55 60
Arg Asn His Leu Asn Gly Asn Gly Val Glu Ile Ile Asp Ile Ser Pro
65 70 75 80
Met Gly Cys Arg Thr Gly Phe Tyr Met Ser Leu Ile Gly Thr Pro Asp
85 90 95
Glu Gln Arg Val Ala Asp Val Trp Lys Ala Ala Met Glu Asp Val Leu
100 105 110
Lys Val Gln Asp Gln Asn Gln Ile Pro Glu Leu Asn Val Tyr Gln Cys
115 120 125
Gly Thr Tyr Gln Met His Ser Leu Gln Glu Ala Gln Asp Ile Ala Arg
130 135 140
Ser Ile Leu Glu Arg Asp Val Arg Ile Asn Ser Asn Glu Glu Leu Ala
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145 150 155 160

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165 170

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<213> Salmonella typhimurium
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35 40 45
Leu Glu His Leu Phe Ala Gly Phe Met Arg Asp His Leu Asn Gly Asn
50 55 60
Gly Val Glu Ile Ile Asp Ile Ser Pro Met Gly Cys Arg Thr Gly Phe
65 70 75 80
Tyr Met Ser Leu Ile Gly Thr Pro Asp Glu Gln Arg Val Ala Asp Ala
85 90 95
Trp Lys Ala Ala Met Ala Asp Val Leu Lys Val Gln Asp Gln Asn Gln
100 105 110
Ile Pro Glu Leu Asn Val Tyr Gln Cys Gly Thr Tyr Gln Met His Ser
115 120 125
Leu Ser Glu Ala Gln Asp Ile Ala Arg His Ile Leu Glu Arg Asp Val
130 135 140
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Glu Thr Asp Ile

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<213> Haemophilus influenzae
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20 25 30
Ile Thr Val Phe Asp Leu Arg Phe Cys Ile Pro Asn Lys Glu Ile Leu
35 40 45
Ser Pro Lys Gly Ile His Thr Leu Glu His Leu Phe Ala Gly Phe Met
50 55 60

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Arg Asp His Leu Asn Gly Asp Ser Ile Glu Ile Ile Asp Ile Ser Pro
65 70 75 80
Met Gly Cys Arg Thr Gly Phe Tyr Met Ser Leu Ile Gly Thr Pro Asn
85 90 95
Glu Gln Lys Val Ser Glu Ala Trp Leu Ala Ser Met Gln Asp Val Leu
100 105 110
Gly Val Gln Asp Gln Ala Ser Ile Pro Glu Leu Asn Ile Tyr Gln Cys
115 120 125
Gly Ser Tyr Thr Glu His Ser Leu Glu Asp Ala His Glu Ile Ala Lys
130 135 140
Asn Val Ile Ala Arg Gly Ile Gly Val Asn Lys Asn Glu Asp Leu Ser
145 150 155 160
Leu Asp Asn Ser Leu Leu Lys
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<210> 14
<211> 155
<212> PRT
<213> Helicobacter pylori

<400> 14
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20 25 30
Asn Gly Asp Leu Ile Val Lys Tyr Asp Val Arg Phe Lys Gln Pro Asn
35 40 45
Gln Asp His Met Asp Met Pro Ser Leu His Ser Leu Glu His Leu Val
50 55 60
Ala Glu Ile Ile Arg Asn His Ala Ser Tyr Val Val Asp Trp Ser Pro
65 70 75 80
Met Gly Cys Gln Thr Gly Phe Tyr Leu Thr Val Leu Asn His Asp Asn
85 90 95
Tyr Thr Glu Ile Leu Glu Val Leu Glu Lys Thr Met Gln Asp Val Leu
100 105 110
Lys Ala Thr Glu Val Pro Ala Ser Asn Glu Lys Gln Cys Gly Trp Ala
115 120 125
Ala Asn His Thr Leu Glu Gly Ala Lys Asp Leu Ala Arg Ala Phe Leu
130 135 140
Asp Lys Arg Ala Glu Trp Ser Glu Val Gly Val
145 150 155

<210> 15
<211> 157
<212> PRT

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Arg Asp His Leu Asn Gly Asp Ser Ile Glu Ile Ile Asp Ile Ser Pro
65 70 75 80
Met Gly Cys Arg Thr Gly Phe Tyr Met Ser Leu Ile Gly Thr Pro Asn
85 90 95
Glu Gln Lys Val Ser Glu Ala Trp Leu Ala Ser Met Gln Asp Val Leu
100 105 110
Gly Val Gln Asp Gln Ala Ser Ile Pro Glu Leu Asn Ile Tyr Gln Cys
115 120 125
Gly Ser Tyr Thr Glu His Ser Leu Glu Asp Ala His Glu Ile Ala Lys
130 135 140
Asn Val Ile Ala Arg Gly Ile Gly Val Asn Lys Asn Glu Asp Leu Ser
145 150 155 160
Leu Asp Asn Ser Leu Leu Lys
165

<210> 14
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<213> Helicobacter pylori

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20 25 30
Asn Gly Asp Leu Ile Val Lys Tyr Asp Val Arg Phe Lys Gln Pro Asn
35 40 45
Gln Asp His Met Asp Met Pro Ser Leu His Ser Leu Glu His Leu Val
50 55 60
Ala Glu Ile Ile Arg Asn His Ala Ser Tyr Val Val Asp Trp Ser Pro
65 70 75 80
Met Gly Cys Gln Thr Gly Phe Tyr Leu Thr Val Leu Asn His Asp Asn
85 90 95
Tyr Thr Glu Ile Leu Glu Val Leu Glu Lys Thr Met Gln Asp Val Leu
100 105 110
Lys Ala Thr Glu Val Pro Ala Ser Asn Glu Lys Gln Cys Gly Trp Ala
115 120 125
Ala Asn His Thr Leu Glu Gly Ala Lys Asp Leu Ala Arg Ala Phe Leu
130 135 140
Asp Lys Arg Ala Glu Trp Ser Glu Val Gly Val
145 150 155

<210> 15
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<213> Bacillus subtilis

<400> 15

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 Val Asn Lys Phe Asp Ile Arg Phe Cys Gln Pro Asn Lys Gln Ala Met
 35 40 45
 Lys Pro Asp Thr Ile His Thr Leu Glu His Leu Leu Ala Phe Thr Ile
 50 55 60
 Arg Ser His Ala Glu Lys Tyr Asp His Phe Asp Ile Ile Asp Ile Ser
 65 70 75 80
 Pro Met Gly Cys Gln Thr Gly Tyr Tyr Leu Val Val Ser Gly Glu Pro
 85 90 95
 Thr Ser Ala Glu Ile Val Asp Leu Leu Glu Asp Thr Met Lys Glu Ala
 100 105 110
 Val Glu Ile Thr Glu Ile Pro Ala Ala Asn Glu Lys Gln Cys Gly Gln
 115 120 125
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 130 135 140
 Leu Ser Gln Asp Lys Glu Glu Leu Leu Lys Val Phe Gly
 145 150 155

<210> 16

<211> 173

<212> PRT

<213> Borrelia burgdorferi

<400> 16

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 20 25 30
 Gly Ile Tyr Val Ser Arg Lys Asp Thr Phe Glu Asn Val Ile Phe Thr
 35 40 45
 Thr Ile Asp Ile Arg Ile Lys Ala Pro Asn Ile Glu Pro Ile Ile Glu
 50 55 60
 Asn Ala Ala Ile His Thr Ile Glu His Ile Gly Ala Thr Leu Leu Arg
 65 70 75 80
 Asn Asn Glu Val Trp Thr Glu Lys Ile Val Tyr Phe Gly Pro Met Gly
 85 90 95
 Cys Arg Thr Gly Phe Tyr Leu Ile Ile Phe Gly Asp Tyr Glu Ser Lys
 100 105 110
 Asp Leu Val Asp Leu Val Ser Trp Leu Phe Ser Glu Ile Val Asn Phe
 115 120 125

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Ser Glu Pro Ile Pro Gly Ala Ser Asp Lys Glu Cys Gly Asn Tyr Lys
130 135 140
Glu His Asn Leu Asp Met Ala Lys Tyr Glu Ser Ser Lys Tyr Leu Gln
145 150 155 160
Ile Leu Asn Asn Ile Lys Glu Glu Asn Leu Lys Tyr Pro
165 170

<210> 17
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<213> *Vibrio cholerae*

<400> 17
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20 25 30
Ile Thr Val Phe Asp Leu Arg Phe Thr Met Pro Asn Lys Asp Ile Leu
35 40 45
Ser Glu Arg Gly Ile His Thr Leu Glu His Leu Tyr Ala Gly Phe Met
50 55 60
Arg Asn His Leu Asn Gly Ser Gln Val Glu Ile Ile Asp Ile Ser Pro
65 70 75 80
Met Gly Cys Arg Thr Gly Phe Tyr Met Ser Leu Ile Gly Ala Pro Thr
85 90 95
Glu Gln Gln Val Ala Gln Ala Trp Leu Ala Ala Met Gln Asp Val Leu
100 105 110
Lys Val Glu Ser Gln Glu Gln Ile Pro Glu Leu Asn Glu Tyr Gln Cys
115 120 125
Gly Thr Ala Ala Met His Ser Leu Glu Glu Ala Lys Ala Ile Ala Lys
130 135 140
Asn Val Ile Ala Ala Gly Ile Ser Val Asn Arg Asn Asp Glu Leu Ala
145 150 155 160
Leu Pro Glu Ser Met Leu Asn Glu Leu Lys Val His
165 170

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<220>
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 <212> DNA
 <213> Artificial Sequence

<220>
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<210> 20
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 <212> DNA
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<220>
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 <212> DNA
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<400> 21
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 <213> Artificial Sequence

<220>
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<210> 23
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 <212> DNA
 <213> Artificial Sequence

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<220>

<223> Description of Artificial Sequence: Synthetic primer

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<210> 24

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

<400> 24

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<210> 25

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

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<210> 26

<211> 171

<212> PRT

<213> Escherichia coli

<400> 26

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Pro Ala Val Arg Val Ala Lys Thr Met Asn Thr Pro His Gly Asp Ala
20 25 30

Ile Thr Val Phe Asp Leu Arg Phe Cys Val Pro Asn Lys Glu Val Met
35 40 45

Pro Glu Arg Gly Ile His Thr Leu Glu His Leu Phe Ala Gly Phe Met
50 55 60

Arg Asn His Leu Asn Gly Asn Gly Val Glu Ile Ile Asp Ile Ser Pro
65 70 75 80

Met Gly Cys Arg Thr Gly Phe Tyr Met Ser Leu Ile Gly Thr Pro Asp
85 90 95

Glu Gln Arg Val Ala Asp Ala Trp Lys Ala Ala Met Glu Asp Val Leu
100 105 110

Lys Val Gln Asp Gln Asn Gln Ile Pro Glu Leu Asn Val Tyr Gln Cys
115 120 125

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Gly Thr Tyr Gln Met His Ser Leu Gln Glu Ala Gln Asp Ile Ala Arg
130 135 140
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165 170

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<213> Escherichia coli

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20 25 30
Ile Thr Val Phe Asp Leu Arg Phe Cys Val Pro Asn Lys Glu Val Met
35 40 45
Pro Glu Arg Gly Ile His Thr Leu Glu His Leu Phe Ala Gly Phe Met
50 55 60
Arg Asn His Leu Asn Gly Asn Gly Val Glu Ile Ile Asp Ile Ser Pro
65 70 75 80
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85 90 95
Ser Ser Val Leu Leu Met Pro Gly Lys Arg Gln Trp Lys Thr Cys
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<220>
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<210> 29
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<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>

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<400> 29
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<210> 30
<211> 8
<212> PRT
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<220>
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1 5

<210> 31
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<220>
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peptide

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<223> Ala(DAPA)

<400> 33

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<211> 8

<212> PRT

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<223> Description of Artificial Sequence: Synthetic peptide

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<221> MOD_RES

<222> (4)

<223> Cys, Ser or Dpr

<400> 35

Asp Ser Val Xaa Ala Ser Tyr Phe
1 5

<210> 36

<211> 164

<212> PRT

<213> Salmonella typhimurium

<400> 36

Asn Ser Asp His Thr Arg Met Gln Ala Pro Ala Val Arg Val Ala Lys
1 5 10 15

Thr Met Gln Thr Pro Met Gly Asp Ala Ile Thr Val Phe Asp Leu Arg
20 25 30

Phe Cys Ile Pro Asn Lys Glu Val Met Pro Glu Lys Gly Ile His Thr
35 40 45

Leu Glu His Leu Phe Ala Gly Phe Met Arg Asp His Leu Asn Gly Asn
50 55 60

Gly Val Glu Ile Ile Asp Ile Ser Pro Met Gly Cys Arg Thr Gly Phe
65 70 75 80

Tyr Met Ser Leu Ile Gly Thr Pro Asp Lys Gln Arg Val Ala Asp Ala
85 90 95

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Trp Lys Ala Ala Met Ala Asp Val Leu Lys Val Gln Asp Gln Asn Gln
100 105 110
Ile Pro Glu Leu Asn Val Tyr Gln Cys Gly Thr Tyr Gln Met His Ser
115 120 125
Leu Ser Glu Ala Gln Asp Ile Ala Arg His Ile Leu Glu Arg Asp Val
130 135 140
Arg Val Asn Ser Asn Lys Glu Leu Ala Leu Pro Lys Glu Lys Leu Gln
145 150 155 160
Glu Leu His Ile